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Preparatory Meeting for the First Consultation
Meeting on the Iron and Steel Industry

Vienna, 7-11 December 1976

CONCLUSIONS AND RECOMMENDATIONS ADOPTED BY THE PREPARATORY MEETING

Prepared by the secretariat of UNIDO

The list of seven issues presented for the consideration of the Preparatory Meeting was enclosed with the letter of the Executive Director of UNIDO inviting member countries and organizations to participate in the First Consultation Meeting on the Iron and Steel Industry in Vienna from 7-11 February 1977 (annex to the Aide-Memoire dated 5 November 1976). Background and supporting information on these seven issues was presented to the Preparatory Meeting by the UNIDO Secretariat in document ID/WG.241/1.

Priority issues recommended by the Preparatory Meeting for consideration at the First Consultation Meeting to be held in Vienna from 7-11 February 1977

The Meeting made recommendations (see annex) on the seven issues proposed by the UNIDO Secretariat. After reviewing these and certain other issues considered during the discussion, the Meeting recommended as priority issues for the First Consultation Meeting the following:

1. To examine the expansion of steel demand and steel-making capacities over the short and medium terms (1985 and 1990) and long term (2000) and to encourage and support the full development of steel projects in the developing countries consistent with the Lima Declaration, bearing in mind the special problems and prospects of developing countries with little or no steel production;

2. To identify and stimulate ways and means of securing the availability and supply at an appropriate price of steel-making raw materials and providing technology and financial resources;

3. With a view to implementing the objectives outlined above, to mobilize the required resources and to develop constructive international co-operation for the expansion of steel production and trade in developing and developed countries.

Annex

CONCLUSIONS AND RECOMMENDATIONS OF THE PREPARATORY MEETING ON THE SEVEN ISSUES SUGGESTED BY THE UNIDO SECRETARIAT

Issue 1 The future requirements, targets and distribution of steel production between the developed and developing countries

Issue 1 (a)

On long-term requirements for steel, the Meeting recognized that:

(1) The consumption/production for the world as a whole could be of the order of 1750 million tons of crude steel by the year 2000;

(2) Keeping in view the Lima target for the developing countries to attain 25% of total world industrial production by the year 2000, and the central role played by the steel industry in industrial development, the share of the developing countries might be as much as 30% of total world steel production. This would mean that the developing countries' steel consumption/production might be 500-550 million tons of crude steel over the period up to 2000. The target of 30% of total world steel production was realistic, because the developing countries had good raw-material resources, human resources (to be developed) and potential national and regional markets, but the actual figure realized would depend upon the soundness of the development schemes and international co-operation;

(3) The figures given were indicative and were used for discussion of the other issues such as requirements of raw materials, financing, manpower, capital goods, etc.

Issue 1 (b)

It was agreed to re-word issue 1 (b) to read as follows:

"Taking into account the steel-production capacity that is under construction and planned in both developed and developing countries, what steps should be taken by Governments and industry in all countries to achieve the steel-production targets and relative share of the developing countries for 1985, 1990 and for subsequent years up to 2000, and to ensure close co-operation between countries to increase the share of the developing countries in world iron and steel production?"

The Meeting recognized that:

(1) There was a need for close co-operation between the Governments and industry of all countries;

(2) Co-operation between the developing countries themselves was also vital;

(3) Steel development in the developing countries would be in keeping with their over-all economic development plans and growth projections;

(4) The future increasing steel capacity projected for developed countries should not inhibit the acceleration of the steel industry in the developing countries, which would have a proportionately greater expansion of the steel industry;

(5) While the expansion plans of the developing countries' steel industry should generally be pragmatically related to their local, regional and other market possibilities, this need not inhibit or delay the projected growth of steel industry in any developing country which has a potential for such development;

(6) In formulating their plans for the development of the steel industry based on feasibility studies, developing countries should also take into consideration the social benefits accruing from the dynamic role of steel in industrialization.

Issue 1 (c)

It was agreed to modify issue 1 (c) to read as follows:

"What case can be made out for the dynamic growth of the steel industry in the developing countries up to the year 2000?"

The Meeting recognized that the steel industry had the most useful role to play in the development of any economy. The justification for the creation of steel capacity could not therefore be based only on conventional economic viability; it should also take into consideration the overall economic and social benefits deriving from the operation of steel plants and the use of steel products.

Issue 1 (d)

The Meeting recognized that:

(1) Developing countries which had little or no steel production might also be capable of having a steel industry. The size and type of that industry would be dictated by the size of the country or region, its status of development, and its natural resources.

Issue 2 Raw materials and fuel requirements and availability

Issue 2 (a)

On the global requirements for raw materials, the Meeting considered that according to future projections on the quantity of raw materials available world wide, no serious problems were envisaged for iron ore and fluxes. However, the known coking coal reserves were relatively limited and were confined to a few regions of the world.

Issue 2 (b)

On steps for international co-operation in the exploration and economic use of raw materials from new reserves, the Meeting considered that:

(1) Although iron ore reserves were plentiful for the future development of the world steel industry as envisaged, it was necessary to take measures for the future development of new mines, transportation systems and related infrastructure;

(2) UNIDO, in collaboration with other United Nations bodies should make a world-wide study of the known iron-ore resources and steps for the exploration of new reserves. That study should also include plans for iron-ore development and transportation requirements;

(3) Developing countries needed assistance in prospecting for raw materials. It was therefore appropriate that existing satellite services should be used to make preliminary information available to all countries concerned with the exploration of potential mineral resources. Developing countries should take advantage of United Nations technical assistance in making their surveys and exploiting their resources;

(4) UNIDO, in co-operation with other United Nations bodies, should survey current mineral legislation in developing countries in order to advise on the right incentives for new investments in the mineral industry in developing countries;

(5) In the past, various steel producing countries had experienced difficulty in securing supplies of coking coal for their industries. Special efforts ought to be made, therefore, to ensure a proper supply of coking coal to the world steel industry;

(6) Special consideration should be given to the development of new technologies for a more economical use of coking coal by: (i) cutting down the coke rate in the blast furnace; (ii) blending prime coking coals with semi- and partly coking coals; (iii) using charcoal and other forest products (UNIDO/FAO could study the subject, using the experience of certain countries); (iv) using formed coke; (v) using other reductants such as gas to replace coking coal completely;

(7) Advantage might be taken of the results of research work being done by some leading industrialized countries on coking coal and application of non-coking coals;

(8) The problem of relative levels of prices for iron ore, coking coal and other basic raw materials might be examined. UNCTAD had indicated that the pricing structure for iron ore would be discussed in the near future under the new UNCTAD "Integrated Commodity Programme" including its common fund;

(9) UNIDO, in co-operation with other United Nations bodies, should study the potential offered by hydro-electric energy for the development of the steel industry;

(10) It was desirable for the advantage of both producing and importing countries that the local processing of raw materials be promoted so as to increase the value added of raw materials for export and obtain higher prices for them, thus enabling raw-materials producing countries to gain adequate returns.

Issue 2 (c)

On measures for mutually advantageous exchange of raw materials, the Meeting considered that:

(1) The exchange of raw materials and fuels might take place on the basis of barter or other bilateral and multilateral arrangements, in addition to the conventional commercial channels;

(2) The importance of and the opportunities for the exchange of raw materials between developing countries was to be emphasized. That might apply to all basic raw materials such as ore, fuels, fluxes, etc.

Issues 3 and 4 Technological alternatives, and know-how and human resources

It was proposed that Issues 3 and 4 should be rearranged as follows:

Issue 3 Technology, which in addition to the present Issue 3, would also comprise Issues 4 (a), (b) and (c). An additional point was suggested for inclusion as Issue 3 (e) to read:

"The Consultation Meeting might consider the relevance and application of present international efforts to improve transfer of technology and elaboration of the corresponding terms and code of conduct";

Issue 4 Human resources and training, which would consist of the present Issues 4 (d), (e) and (f).

The Meeting considered the present Issues 3 and 4 together and offered general comments on the two issues and specific comments on the sub-issues as originally formulated.

Issue 3 (a)

On a proper technical and economic evaluation of technologies, the Meeting recognized that developing countries should try to develop their own national or regional/sub-regional consultancy services. The latter might offer special opportunities for small developing countries. Countries which had no chance to develop their own consultancy services should at least develop their own skills so as to be able to use and evaluate imported technology services properly.

Issue 3 (b)

On measures to ensure the development and adaptation of alternative technologies, the Meeting:

(1) Recognized that the developing countries should carefully select appropriate technology, not necessarily aiming at the most modern - which might create problems of management, maintenance and operation. Developing countries should try particularly to avoid running the risk of applying unproven technological processes. They should not, however, be discouraged from carrying out the necessary continuing research in order to keep up with the modern trend of development which might offer them new ideas.

(2) Recommended that UNIDO should promote the exchange of technological information between developed and developing countries, with special attention to alternative technologies and most recent developments in technological processes. That promotion should be particularly designed to serve the small, non-producing countries.

Issue 3 (c)

For the benefit of developing countries in planning the size of their plants with relation to the market, UNIDO should compile information on historical experience, country-by-country, concerning market evolution before and after installation of steel plants.

Issues 4 (a), (b) and (c)

On consultancy services, the Meeting recognized that:

(1) It was imperative for developing countries intending to set up a steel industry to set up planning groups manned by appropriate technical personnel who, even though not experienced in steel, might be usefully associated with foreign consultants. Such groups would be able to guide foreign consultants regarding a country's needs and requirements, keeping in view local conditions. That would enable the most appropriate technology to be adopted to suit local conditions and would help the transfer of technology. A planning group could gradually grow into a proper design and engineering organization;

(2) When foreign consultancy services were being employed by a developing country, special consideration should be given to local conditions and needs. That would facilitate the selection of the most appropriate technology for the country concerned;

(3) The possibility of developing countries setting up regional consultancy organizations should be examined. That was particularly true in the case of various developing countries which had a very young industry or were just starting and were not in a position to have fully-fledged consultancy services individually.

Issue 4 (d)

On the experience of the developing countries in the training of personnel, the Meeting recognized that:

(1) Developing countries were generally appreciative of the training given to their engineers and operators abroad, which served as a good nucleus for commissioning their initial installations. The training was continued with the help of foreign experts who had local trainees seconded to them on main projects;

(2) Difficulties had sometimes been experienced by developing countries in gainful employment of their foreign-trained personnel, where training had not been synchronized with the start-up of the operation of the plant; the result had been a brain-drain from the developing to the developed countries;

(3) It might be desirable in some cases to recruit a limited number of foreign experts at the highest level. However, the main difficulty lay in training the intermediate and operating cadres who were required in large numbers and who would be directly responsible for the day-to-day operation and maintenance of the plant.

Issues 4 (e) and (f)

On measures to promote the training of personnel and establishing local training facilities, the Meeting recognized that:

(1) The human resource was a major factor in the efficient planning, installation and operation of steel plants. Training was especially stressed. Training could take various forms - managerial cadres, engineers for maintenance and repair of the plants, technicians and operators for the operation of the plants, and miscellaneous skilled and unskilled labour. It was advantageous to give training in appropriate technologies, especially when such training was to be given abroad so that "the trainees on return fulfilled local requirements. But local training was preferred where possible;

(2) Transfer of technology would be greatly helped if local talent was associated (where possible) with foreign experts at all stages of planning, designing, construction and commissioning of a new steel plant. The extent of the association would vary from case to case and country to country, depending on the specific conditions prevailing;

(3) UNIDO should promote regional training. Advantage should be taken of training facilities in developing countries with steel industries.

Issue 5 Potential for the manufacture of capital goods for the iron and steel industry in developing countries

The Meeting recognized that:

(1) The development of capital goods manufacturing capacity was a logical development after the establishment of steel projects. It was the general experience all over the world that the heavy engineering industry not only served the steel industry but also had the capacity to manufacture capital goods for several other industries that used heavy equipment;

(2) In view of the huge requirements for capital goods to meet the envisaged increased steel capacity by the year 2000, a very large addition to existing capital-goods manufacturing capacity would be necesrary throughout the world. Consequently, even after the development of substantial capacity for the manufacture of capital goods in the developing countries, there would still be vast scope for advantageous participation by the developed countries;

(3) Heavy engineering industry might start gradually, so that most of the plant, equipment and services were imported for the initial plant. With the expansion of existing capacity or the installation of additional capacity, an increase of the indigenous component of the plant, equipment and services became possible. The process could be accelerated and the right incentives given as more capacity came into being by expansion or by installation of new plants on green field sites;

(4) One of the reasons for developing indigenous and manufacturing capacity, apart from high prices, was the large amount of foreign exchange involved in importing equipment, which might upset a country's balance of payments. That made it imperative for each country to have an indigenous source of supply of heavy equipment;

(5) The establishment of a capital-goods manufacturing industry involved considerable transfer of technology. That could be facilitated by joint ventures between suppliers and client countries. There were also possibilities of joint ventures between the developing countries themselves;

(6) Joint ventures were of interest to both developed and developing countries. In a developing country especially, a joint venture alleviates the problem of providing full capital for the venture, transfer of technology, training of local personnel, and the like;

(7) While suppliers were likely to give guarantees when they supplied all equipment on a turn-key basis, it was still in the interest of the developing countries to maximize the supply of indigenous components;

(8) Although the international financing institutions applied their own criteria to the financing of industrial projects (example of the IBRD principle), local industries should be given proper incentives, including more favourable financial terms from the lending institutions;

(9) Because of the importance of the manufacture of capital goods for the steel industry, a separate Consultation Meeting on the issue of capital goods for the steel industry was favoured.

Issue 6 Investment and financial requirements for expansion of the world's iron and steel industry

Issue 6 (a)

(1) It was generally recognized that the estimated requirements for capital and financing for the expansion of the world's iron and steel industry was one of the main issues to be considered by the Consultation Meeting;

(2) The Meeting felt that the issue highlighted the need to quantify the financial resources needed and identify potential sources for the expansion of the world's iron and steel industry up to the year 2000;

(3) It was recognized that financing might well be the principle obstacle to the development of the iron and steel industry in developed and developing countries. The need to make the international community aware of the problem during the forthcoming Consultation Meeting was stressed.

Issue 6 (b)

The Meeting felt that international organizations such as UNIDO should make a study of the general developmental benefits resulting from the creation of a steel industry and develop a methodology for quantifying those benefits so as to enable international financing agencies to take them into account in their evaluation of steel projects for which their financing may be requested.

Issue 6 (c)

(1) The Meeting recognized that since decisions by the developing countries to develop their iron and steel sector might well depend on financing opportunities, the problems related to financing should be fully realized and solved;

(2) It was suggested that the issue should be re-worded to read: "What has been the actual experience of developing countries in obtaining the needed capital and finances for investment in their iron and steel industry in relation to: bilateral and multilateral loans and long-term financial assistance; private investment; barter, trade, reciprocity arrangements and leasing? For the future growth of the iron and steel industry what is the relative potential of these forms of international financing and co-operation? The terms and conditions of external and local financing should take into account the extended construction periods and high capital intensity related to the establishment of the steel industry";

(3) It was felt that financial agreements should include grace periods for repayment until full-rated capacity of the steel plant was attained.

Issue 6 (d)

The Meeting recognized that international competitive bidding, when applicable, was a competent way to ensure adequate control of the cost of procurement of plant and equipment. The Meeting also commended the practice of combining international competitive bidding with pre-arranged bilateral credits from the Governments of the countries potentially offering plant and equipment. That allowed flexible bi-lateral financing to be arranged, without the possibility of encountering higher costs through direct supplier credits, especially on turn-key contracts.

Issue 6 (e)

It was suggested that the issue should be reformulated to read:

"What steps should the developing countries take to promote local currency financing from internal sources in the field of iron and steel industry, bearing in mind that the local financing component will increase in step with greater domestic equipment manufacture?"

Issue 7 International trade implications

Issue 7 (a)

The Meeting agreed that the issue was of great importance in relation to the attainment of the Lima Target. The main factors discussed included:

(1) The relationship between demand and supply for raw materials, particularly iron ore, and the question of developing countries' access to supplies of coking coal;

(2) The effect of raw materials supply and demand on the pricing structure, and problems associated with marketing the intermediate (e.g. sponge iron) and finished iron and steel products of the developing countries as their capabilities grew.

(3) The effect of the structure of the international steel market (from raw materials to finished products) on the composition of trade and the distribution of profits between the developing and developed countries.

Issue 7 (b)

It was agreed that the issue, although important, should be deleted, because it could be better handled in such other international fora as GATT and UNCTAD.

Issue 7 (c)

Discussion on the issue concentrated on the need to examine price formation modalities which are equitable to producers and consumers of raw materials. Given the probable doubling of world demand for iron ore by the year 2000, and the inevitable rise in input prices, the issue was a priority area for consideration at the Consultation Meeting. The current UNCTAD work on the establishment of a common fund for its integrated commodity approach, which included consideration of iron ore, should be examined.

Issue 7 (d)

It was agreed that the issue should not be included in the final set of issues because it was more a matter for individual Government action.